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STANFORD UNIVERSITY SCHOOL OF MEDICINE
Department of Genetics

March 8, 1972

Mr. Richard S. Lewis
Editor
Bulletin of The Atomic Scientists
1020-24 East 58th Street
Chicago, Illinois 60637

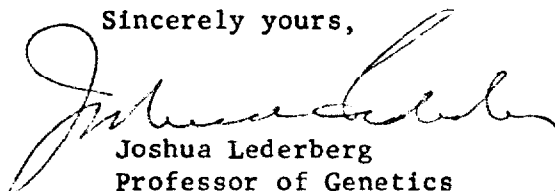
Dear Mr. Lewis,

Dr. Sternglass believes that the human fetus is especially sensitive to radiation, by a factor of 1000-fold compared to the adult. Even though differentials of this magnitude are unsubstantiated by animal studies, the conclusion is theoretically infeasible and empirically difficult to refute. Epidemiological studies are hampered by the primitive state of medical data collection and by the low doses to which, happily, human exposure is generally limited. It is also notoriously difficult to isolate the relevant variables. Much of Sternglass' argument is based on a still unpublished report (Lave, L.B. et al.) which is not here available for critical analysis.

These confusions are all good reasons for stressing the natural radiation background rather than the calculated biodetriment as the basis for radiation policy. The dollar equivalents assigned to the biodetriment in my article would attribute at least 10% of our overall health burden to natural environmental radiation. Were we to increase that figure very much we would leave no room for contagion, chemical pollution, dyshygienic life styles and genetic polymorphisms.

To the extent that new cautions about the sensitivity of fetuses have spared them their average quota of medical x-rays, other sources of radiation indeed will bear a larger culpability. However, the natural background, 100 mr at sea level, and much higher at altitude, stands as an inescapable yardstick for judging the predictable impact of other forms of radiation, like nuclear power. I believe that, pending scientific data more reliable and more reassuring than are now available, we do well to retain standards for population exposure from nuclear power that fall 1) within a few percent of that figure and 2) far below the fluctuations related to altitude and construction materials. I am gratified that after much delay and inexcusable confusion the AEC in 1971 promulgated regulations consistent with these standards. Medical x-rays are, of course, absolutely justified for many indispensable applications, but tighter discipline could minimize medically useless tests and technically careless spillage of radiation.

Sincerely yours,


Joshua Lederberg
Professor of Genetics

LEWIS, Richard

cc 524 830A